

## REMARKS

Claims 1 – 33 are presently pending. In the above-identified Office Action, the Examiner rejected Claims 1 – 4, 13 – 21 and 30 – 33 under 35 U. S. C. § 102(b) as being anticipated by McKenney ('712) and Manhart ('951). Claims 5 – 12 and 22 – 29 were rejected under 35 U. S. C. § 103(a) as being unpatentable over McKenney.

By this Amendment, Applicants have amended the limitations of Claim 5 into Claim 1, Claim 22 into Claim 18 and presented Claims 6, 9 and 10 in independent form as new Claims 34 – 36 respectively.

For the reasons set forth more fully below, the subject application is submitted as properly presenting claims patentable over the prior art. Accordingly, reconsideration, allowance and passage to issue are respectfully requested.

The invention addresses the need in the art for a system and method for reducing the aberrations and deleterious effects of conformal and complex shaped optical windows used with optical sensors. In accordance with the invention, a system and method for sensing light transmitted with reduced optical aberrations into the interior of an enclosure is taught. A window is disposed on the exterior surface of the enclosure for allowing light to pass into the enclosure. A lens is disposed on the interior side of the window, defining a cavity between the window and the lens. A fluid is disposed within that cavity. An optical sensor is disposed in the interior of the enclosure, and positioned to receive light through the window and the lens. **The fluid is selected to have an index of refraction that minimizes any mismatch with the index of refraction of the window.**

The invention is set forth in claims of varying scope of which Claim 1, as amended, is illustrative. Claim 1 now recites:

1. A system for sensing light transmitted with reduced optical aberrations into the interior of an enclosure, comprising:
  - a window disposed on the exterior surface of the enclosure for allowing light to pass into the enclosure;
  - a lens disposed on the interior side of said window, defining a cavity between said window and said lens;
  - a fluid disposed within said cavity, **said fluid having an index of refraction that minimizes any mismatch with the index of refraction of said window and**
  - an optical sensor disposed in the interior of the enclosure and positioned to receive light through said window and said lens.(Emphasis added.)

None of the references, including those cited but not applied, teach, disclose or suggest the invention as presently claimed. That is, none of the references teach, disclose or suggest a system for sensing light transmitted into the interior of an enclosure with reduced optical aberrations having a fluid disposed between a lens and a window with an index of refraction chosen to minimize any mismatch with the index of refraction of the window as presently claimed.

In the above-noted Office Action, the Examiner cited McKenney and Manhart and suggested that these references anticipated or suggested the invention as claimed. McKenney purports to teach an optical system and method for providing corrected optical images. The Examiner suggests that a fluid is taught in a cavity between a window and a corrective lens of the reference. However, no means or teaching is disclosed in the reference for using a fluid other than air.

Moreover, no teaching is provided with respect to a selection of a fluid with an index of refraction that minimizes any mismatch between the indices of refraction of the window and the fluid to reduce the attenuation of incident light therethrough.

Although this shortcoming is acknowledged by the Examiner in paragraph 8, the Examiner suggests that it is well known in the art to match the index of refraction of the fluid and the window and it would therefore be obvious to one of ordinary skill in the art to do so to reduce the attenuation of incident light.

However, the Examiner cites no references in support of the premise and the Examiner's conclusion is a *non sequitor* vis-à-vis the system as claimed. The question is whether it would be obvious to include a fluid with an index matched to a window that

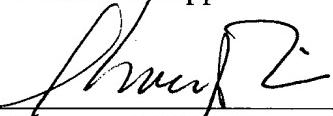
bounds an enclosure with a sensor in a cavity between the window and a lens as presently claimed. In short, Applicant does not seek to patent the broad principle of index matching, but only the application set forth in the claims as presented. Inasmuch as the claims are not taught or suggested by McKenney, Applicant respectfully submits that rejections based on this reference should be withdrawn.

The same arguments apply to the Manhart reference. That is, neither Manhart nor McKenney teach use of a liquid in the cavity other than air or the use of a fluid with an index matched to that of the window. Inasmuch as the claims are limited to the use of a fluid with an index matched to that of the window or water, the claims should be allowable.

Reconsideration, allowance and passage to issue are therefore respectfully requested.

Respectfully submitted,  
David J. Knapp

By \_\_\_\_\_

  
Thomas J. Finn, Esq.  
Attorney for Applicant  
Registration No. 48,066

Raytheon Company  
1151 E. Hermans Road  
Bldg. 807/F8  
Tucson, AZ 85706

(520) 794-7980  
(520) 794-8171 facsimile